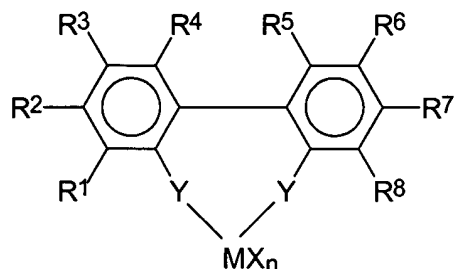




ATTACHMENT A

1. (Original) A process for preparing racemic metallocene biphenoxide complexes
by reacting transition metal complexes of the
formula (I)



(I),

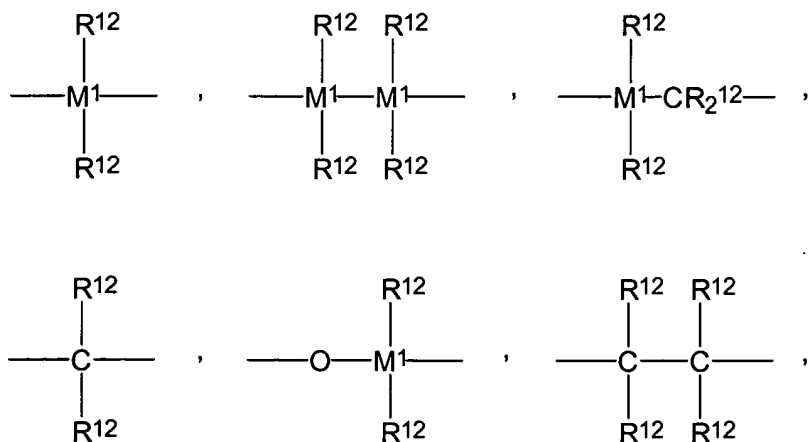
where the substituents and indices have the following meanings:

- M is titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten or an element of transition group III of the Periodic Table and the lanthanides,
- X are identical or different and are each fluorine, chlorine, bromine, iodine, hydrogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, -OR⁹ or -NR⁹₂, where R⁹ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl, C₃-C₁₀-cycloalkyl, alkylaryl,
- n is an integer from 1 to 4 and corresponds to the valence of M minus 2,

$R^1, R^2, R^4, R^5, R^7, R^8$ are identical or different and are each hydrogen, fluorine, chlorine, bromine, iodine, C_1 - C_{20} -alkyl, 3- to 8-membered cycloalkyl which may in turn bear a C_1 - C_{10} -alkyl group as substituent, C_6 - C_{15} -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, arylalkyl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, $-OR^{10}$, $-SR^{10}$, $-N(R^{10})_2$, $-P(R^{10})_2$ or $Si(R^{10})_3$, where R^{10} are identical or different and are each C_1 - C_{10} -alkyl, C_6 - C_{15} -aryl, C_3 - C_{10} -cycloalkyl, alkylaryl, where the radicals mentioned may be partially or fully substituted by heteroatoms,

R^3, R^6 are identical or different and are each hydrogen, $-OR^{11}$, $-SR^{11}$, $-N(R^{11})_2$, $-P(R^{11})_2$ or $Si(R^{11})_3$, where R^{11} are identical or different and are each C_1 - C_{10} -alkyl, C_3 - C_{10} -cycloalkyl,

Y are identical or different and are each



= BR¹², = AlR¹², -Ge-, -Sn-, -O-, -S-, = SO,
 = SO₂, = NR¹², = CO, = PR¹² or = P(O)R¹²,

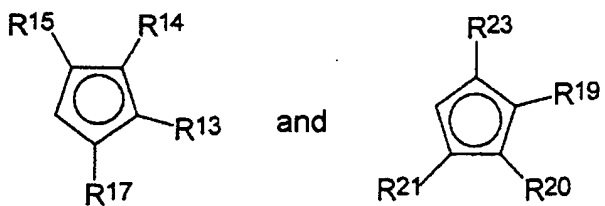
where

R¹² are identical or different and are each hydrogen, halogen, C₁-C₁₀-alkyl, C₁-C₁₀-fluoroalkyl, C₆-C₁₀-fluoroaryl, C₆-C₁₀-aryl, C₁-C₁₀-alkoxy, C₂-C₁₀-alkenyl, C₇-C₄₀-arylalkyl, C₈-C₄₀-arylalkenyl, C₇-C₄₀-alkylaryl, or two radicals R¹² together with the atoms connecting them form a ring,

M¹ is silicon, germanium or tin,
 with cyclopentadienyl derivatives of alkali metals or alkaline earth metals and heating the reaction mixture obtained in this way to a temperature in the range from -78 to 250°C.

2. (Previously presented) A process as claimed in claim 1 comprising the following successive steps:

a) deprotonation of compounds of the formulae (IVa) and (IVb)



(IVa)

(IVb)

by means of a suitable deprotonating agent, where R¹³, R¹⁴, R¹⁵, R¹⁷ are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl

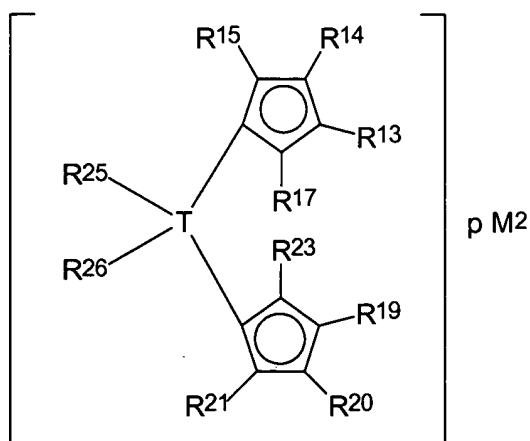
group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R¹⁸)₃, where

R¹⁸ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl, and

R¹⁹, R²⁰, R²¹, R²³ are identical or different and are each hydrogen, C₁-C₂₀-alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C₁-C₁₀-alkyl group as substituent, C₆-C₁₅-aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or Si(R²⁴)₃, where

R²⁴ are identical or different and are each C₁-C₁₀-alkyl, C₆-C₁₅-aryl or C₃-C₁₀-cycloalkyl,

b) reaction of the deprotonated compounds (IVa) and (IVb) with a compound [T(R²⁵)(R²⁶)]_mHal₂, where Hal is a halogen substituent such as F, Cl, Br or I, and subsequent repeat deprotonation by means of a suitable deprotonating agent to form a compound of the formula (IIIa)



where

M^2 is an alkali metal ion or alkaline earth metal ion,

where

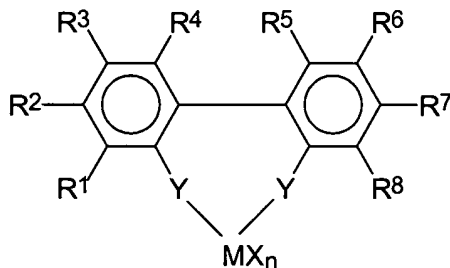
p is 1 when M^2 is an alkaline earth metal ion and is 2 when M^2 is an alkali metal ion, and

T can be identical or different and are each silicon, germanium, tin or carbon,

R^{25} , R^{26} are identical or different and are each hydrogen, C_1 - C_{10} -alkyl, C_3 - C_{10} -cycloalkyl or C_6 - C_{15} -aryl, and

m is 1, 2, 3 or 4;

c) reaction of the compound of the formula (IIIa) with a transition metal complex of the formula (I)



(I),

where the substituents and indices are as defined in claim 1.

3. (Previously preented) A process as claimed in claim 2, wherein the deprotonating agent is n-butyllithium, tert-butyllithium, sodium hydride, potassium tert-butoxide, Grignard reagents of magnesium, magnesium compounds, alkaline earth metal alkyl components or alkali metal alkyl compounds.

4. (Previously presented) A process as claimed in claim 2 which is carried out without isolation of intermediates after individual process steps.

5. (Previously presented) A process as claimed in claim 2, wherein in the compounds of the formula (IIIa), M^2 is magnesium and R^{17} and R^{23} are each hydrogen, C_1 - C_{10} -alkyl, C_6 - C_{10} -aryl, trialkylsilyl, and $T(R^{25}R^{26})$ is bis- C_1 - C_{10} -alkylsilyl or bis- C_6 - C_{10} -arylsilyl, 1,2-ethanediyl or methylene; and the radicals R^{13} to R^{15} and R^{19} to R^{21} form an indenyl-type ring system or a benzindenyl-type ring system.

6. (Previously presented) A process as claimed in claim 1, wherein the reaction of the cyclopentadienyl derivatives with compounds of the formula (I) is carried out with addition of free radicals or free radical formers to the reaction mixture.

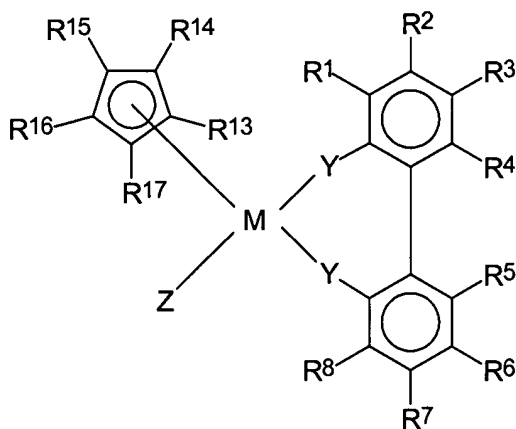
7. (Previously presented) A process as claimed in claim 1, wherein R^1 and R^8 in the formula (I) are bulky substituents.

8. (Previously presented) A process as claimed in claim 1, wherein R^3 and R^6 in the formula (I) are each methoxy, ethoxy, isopropoxy, tert-butoxy, cyclopropoxy or cyclohexyloxy.

9. (Previously presented) A process as claimed in claim 1, wherein the bridging units Y in the formula (I) are identical and are each oxygen.

10. (Previously presented) A process as claimed in claim 1, wherein cyclopentadienyl derivatives of magnesium or lithium are used.

11. (Original) A racemic metallocene biphenoxide complex of the formula (II)

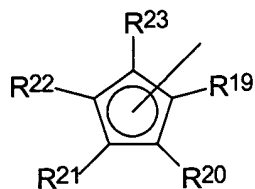


(II),

where Y, M and R^1 to R^8 are as defined in claim 1, and R^{13} to R^{17} are identical or different and are each hydrogen, C_1 - C_{20} -alkyl, 5-to 7-membered cycloalkyl which may in turn bear a C_1 - C_{10} -alkyl group as substituent, C_6 - C_{15} -aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or $Si(R^{18})_3$, where

R^{18} are identical or different and are each C_1 - C_{10} -alkyl, C_6 - C_{15} -aryl or C_3 - C_{10} -cycloalkyl, and

Z is



where the radicals

R^{19} to R^{23} are identical or different and are each hydrogen, C_1 - C_{20} -alkyl, 5- to 7-membered cycloalkyl which may in turn bear a C_1 - C_{10} -alkyl group as substituent, C_6 - C_{15} -aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or $Si(R^{24})_3$ where

R^{24} are identical or different and are each C_1 - C_{10} -alkyl, C_6 - C_{15} -aryl or C_3 - C_{10} -cycloalkyl,

or the radicals

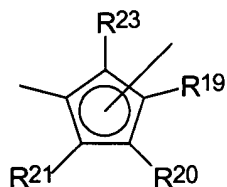
R^{16} and Z together form a $-[T(R^{25})(R^{26})]_m-E-$ group, where

T may be identical or different and are each silicon, germanium, tin or carbon,

R^{25} , R^{26} are each hydrogen, C_1 - C_{10} -alkyl, C_3 - C_{10} -cycloalkyl or C_6 - C_{15} -aryl

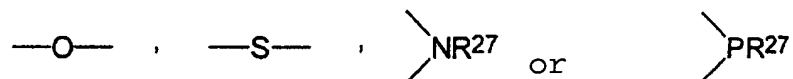
m is 1, 2, 3 or 4, and

E is



or A, where

A is



where R^{27} are identical or different and are each C_1 - C_{10} -alkyl, C_6 - C_{15} -aryl, C_3 - C_{10} -cycloalkyl, alkylaryl or $\text{Si}(R^{28})_3$

where R^{28} are identical or different and are each C_1 - C_{10} -alkyl, C_6 - C_{15} -aryl, C_3 - C_{10} -cycloalkyl or alkylaryl.

12. (Original) A racemic metallocene biphenoxide complex as claimed in claim 11 in which R^{17} and R^{23} are not hydrogen when R^{16} and Z together form a $-\text{[T}(R^{25})(R^{26})]_m\text{-E-}$ group.

13. (Cancelled)

14. (Previously presented) A catalyst which comprises the racemic metallocene as claimed in claim 11.

15. (Previously presented) A catalyst which comprises the racemic metallocene as claimed in claim 12.

16. (Currently amended) A process as claimed in claim 5 wherein R^{17} and R^{23} are methyl, ethyl, n-propyl, i-propyl, n-butyl, sec-butyl, tert-butyl, i-butyl, hexyl, phenyl, or trimethylsilyl and $\text{T}(R^{25}R^{26})$ is dimethylsilyl, diphenylsilyl, 1,2-ethandiyl or methylene.

17. (Previously presented) A process as claimed in claim 16 wherein the reaction of the cyclopentadienyl derivatives with compounds of the formula (I) is carried out with addition of free radicals or free radical formers to the reaction mixture, and wherein R^1 and R^8 in the formula (I) are bulky substituents, R^3 and R^6 in the formula (I) are each methoxy, ethoxy, isopropoxy, tert-butoxy, cyclopropoxy or cyclohexyloxy, the bridging units Y in the formula (I) are identical and are each oxygen, and cyclopentadienyl derivatives of magnesium or lithium are used.

18. (New) The process as claimed in claim 3, wherein the magnesium compounds are di-n-butylmagnesium, (n,s)-dibutylmagnesium, and mixtures thereof.

19. (New) The process as claimed in claim 5, wherein the C_6 - C_{10} -aryl is phenyl.

20. (New) The process as claimed in claim 5, wherein the trialkylsilyl is trimethylsilyl.